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NRCS Natural Resources Conservation Service

Cape May Plant Materials Center

US Army Corps of Engineers® New York District

Equipment Settings for Cleaning Seed of Spike grass *Distichlis spicata (*L.) Greene.

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Abstract

The purpose of this project was to determine the most efficient and yet affordable process by which to clean seed of spike grass.

Due to the inherently low seed yields and difficulty in harvesting seed of this species, mechanization of cleaning seed has received limited attention. In this study we compared the processes of hand cleaning to the use of commercially available seed cleaning equipment.

Yields associated with hand cleaning were equivalent to 60 grams per 24 hours or about 2.5 grams/hour. Seed cleaning equipment yields were about 600 grams in 24 hours or 25 grams/hour.

Materials and Methods:

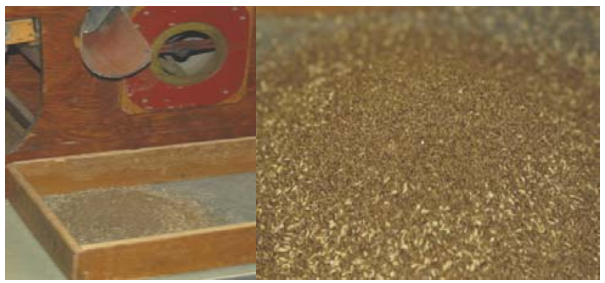
Hand labor, tarps, trashcans, screening, low volume compressed air, shop vacuum, Hance Corporation Scalper Model 36-A No. 10 screen, and work bench. *(see below)*

Machine Cleaning:
Westrup Lab Brush Seed Cleaner Model LA-H, using a mantle with #5 square mesh screen. *(see below)*

A Clipper Seed Separator Model Office Tester using cardboard, 1/14 by ¼ slotted screen, and a ¼ round screen.

Seed Collection and Drying:
Seed was collected from the Jamaica Bay in New York. Materials were transported to the USDA NRCS Cape May Plant Materials Center (PMC) and allowed to air dry for two weeks on a plastic tarp. *(see below)*

Photos above showing first run materials with high percentage of glumes still intact.



Photo's above showing second run materials with less glumes intact.

Results and Discussion:

Hand processing a quantity of seed takes significantly more time than using seed cleaning equipment to do the same job.

Hand processing yield: 60 grams of seed in a 24 hours or 2.5 grams per hour.
Mechanized processing yield: 600 grams of seed in 24 hours or 25 grams per hour.

Summary:

Cost effective mechanized seed cleaning of the coastal halophyte spike grass is possible. A propagator will need to carefully examine available labor rates, the quantity of seed that will be processed and the cost of the machinery on a gram/ hour basis to determine if production speed will offset the cost of investing in the appropriate equipment.

For small scale nursery operations with limited anticipated seed cleaning and/or production of this species, hand cleaning may be the most cost effective technique since it requires less capitol investment.

The purchase costs associated with this equipment can be amortized across multiple species and many years of service, however, because of the versatility of the equipment and the availability of many different screen sizes.

Equipment Manufacturer Disclaimer:

The mention of trade and company names does not imply any guarantee, warranty or endorsement by the USDA Natural Resources Conservation Service nor does it imply approval to the exclusion of other products that may also be suitable.